

# AUTOMOBILE NEWS

## Many Points To Watch In Buying Used Cars

Motor, Driving Mechanism, Bearings, Springs, Axles, Should All Be Examined Closely By Purchaser Before Car Is Accepted—Testing Compression Is Important Point—Listen to Knocks When Machine Is Running—Road Test Essential

Having made up your mind to purchase a motor car and deciding that the cost of a new one is too great an outlay, you naturally turn to the used car market, which is usually well stocked with machines of various makes and conditions of repair, according to the Motor Print. The first thing to do is to follow diligently the "automobiles for sale" advertisements. By doing this for a week or so you will be able to gain some knowledge of current prices of models, which will help you to tell whether any real bargains are to be had and where to find them.

After you have examined various machines and feel that you are satisfied with the model and general outward appearance of the desired car, you should next give it a thorough mechanical inspection. If you are a novice it would be well to take with you a friend who has had some extensive experience with cars and upon whose advice you feel that you can rely.

**Test Compression**  
First go to the front of the machine and take hold of the crank handle and proceed to turn over the motor. This is known as "testing the compression" and is quite an important feature, as by this test you can judge the internal condition of the engine. By catching the handle in the lifting position and pulling upward and over you will meet with a strong resistance, which is the compression. In one of the cylinders. At the end of the stroke the motor will have a tendency to turn over a half turn by itself until it reaches the commencement of the compression stroke of the next cylinder. Then repeat the operation, noticing the resistance offered to your lift and continue until you have tested all the cylinders.

This test discloses the equality of the pressure produced in each one of the cylinders, and in any motor which is in good condition this pressure or compression should seem equal at every pull up. If no resistance is felt in any one of the cylinders then it is classed as "weak." The remedy for this is either grinding or adjusting the valves, or replacing the rings on the piston of that cylinder.

**Listen for Knocks**

After the compression has been tested and passed upon favorably lift the hood that covers the motor and ask the demonstrator to start the engine for you. While having the motor run at the various speeds listen carefully for the presence of any thump, knock or tap. Of course, the noiselessness of a motor in motion is proof of its perfection, but you must not expect this condition in a used car unless it be of the latest manufacture, for you must understand that all machinery is subject to wear and tear and consequently to the production of noise.

Should any knock make itself preponderant, however, then there is something serious which needs attention. While it may not be anything radically wrong at the same time it may become so and necessitate the making of expensive repairs. For immediate purposes the only "knock" that need be noticed is one in a bearing which may be recognized most often as a dull or heavy metallic knock, heard at every revolution of the motor fly wheel. This may be accentuated by the short circuiting of one or more of the spark plugs, in turn, by placing a screw driver against one of the plug terminals at the same time touching any metallic part of the motor. A condition existing such as this would require the attention of a mechanic and should be remedied at once. Nearly every other knock or tap that might be heard can be eliminated by slight adjustments to the external mechanism.

**Examine Driving Shaft**

While examining the motor, look well for any cracks in the cylinder walls, crank case, supporting arms or chassis that would tend to weaken the structure of the machine. Then, too, note the smoothness with which the engine runs and ask to have the cutout open and listen for the regular and even staccato of explosions as they are exhausted. Should there seem to be a miss in their regularity, there would be need of further adjustments for the miss may be caused by a broken or dirty spark plug, tight valve adjustment, carbon deposit on the valve seat, poor contact in ignition system or bad mixture in the carburetor. If any of these things is at fault have it remedied before finally accepting the car.

Another important point to be inspected is the condition of the driving shaft and the rear end, which may be easily discovered by jacking up one of the rear wheels and turning it backward and forward slowly. If there is any wear in the universal or the drive shafts it will at once become apparent through a clacking noise as you roll the wheel. Likewise the play or wear in the differential can be easily felt as you hold the wheel firmly and twist it. If the universals are much worn they should be repaired, for their poor condition will tend toward ruining the clutch, transmission and differential.

Providing that your examination of the motor has proved nothing to be worn beyond reasonable repair, go

now to the running gear of the car, which should be thoroughly examined. Take hold of each wheel in turn and shake, noting the play or looseness, which will denote the condition of the bearings in the hubs. Should there be quite a perceptible freedom of movement, then the bearings should be tightened or, if necessary, replaced. Note that the steering rods on the front wheels are tight and that the wheels are in alignment or parallel. The brakes on the rear wheels should be closely examined as to their efficiency, and while you are doing this it would be well to look for broken springs and bent or twisted axles.

**Road Test Essential**  
These important features having been well looked into, the next step in your examination is a demonstration on the road, for it is there that the car will prove its ability.

The best way to test the power of the motor is to try climbing a fairly steep hill, and the car's ability to go up on the high gear is a mark of the pulling power of the motor. One, however, must not expect too much of a machine, for numerous conditions, too numerous to set forth here, govern the efficiency of it while traveling over the road. These can best be reckoned with according to the buyer's sense as they present themselves.

If all your examinations of your prospective purchase have been satisfactory and the road test has shown you what the car can do, the only thing left before paying your money is to see that you get all the customary accessories which go with a machine. Bear in mind, however, that the car has been in the possession of another, and if a few things are missing from its equipment don't blame the shortage upon the dealer, in spite of the fact that you are entitled to all you can get for as little as you can give—that is business. You should be prepared to expend a little more than the actual buying price on the car in order to satisfy your particular tastes, but the amount you can have done for you depends wholly upon your persuasive powers as applied to the dealer.

**Know Your Car**

When all these things have been settled and before closing the deal, get a proof of the ownership of the car from the dealer, confirm the

## 45,000 WORK IN DETROIT PLANT MAKING FORDS

Ford Motor Company Increases Force to Handle Increased Orders for Cars

On July 31 the Ford Motor Company completed its 1915-16 year with a production of 533,921 cars. This volume of output and its distribution mark an achievement without any parallel in the history of the automobile industry. The building and distribution of these half-million cars has brought a proportionate growth in every department of the Ford institution, and this enlargement culminated in the opening on August 1 of new direct company branches in 28 of the larger cities of the United States. When the Detroit factory established a goal of 500,000 cars on August 1, 1915, the Ford company had completed a production for 1914-15 of 369,000 cars and shared over \$15,000,000 with its retail buyers. Now the year recently closed has again seen the fulfillment of predictions in spite of an increase of 66 and two-thirds per cent in the market over the output of the previous 12 months.

To build these cars the number of employees at the parent Ford factory has been increased to more than 33,000 at the present time, while the payrolls of the branch factories and branches have grown to more than 12,000 names.

The quantities of raw materials entering into a half million production of Ford cars are beyond the grasp of the average individual. First there is 200,000 tons of vanadium steel heat treated by special Ford processes, 2,000,000 each of wheels and tires, 51,950,250 square feet of rubber cloth material in the tops, 2,587,500 square feet of plate glass in the windshields with other stocks in proportion. The volume of these materials has brought about methods in their handling and manufacturing operations which have

motor numbers set forth with those on the engine of your car, turn over your money, obtain your bill of sale, and the car is yours for better or worse, richer or poorer—it all depends upon the care you take of it. Now just a final word. Take your machine home and on your first day off don your overalls and get acquainted with your new servant.

The old axiom applies to used cars even more than to new ones:—Know Your Car.

worked distinctive Ford savings in production cost and these combined with new methods of distribution have made possible the remarkable reductions in Ford prices announced on August 1.

No official announcement has yet been made of the proposed production for the ensuing year.

**MIX GRAPHITE WITH GREASE FOR BEARINGS**

To overcome the friction caused by myriads of tiny hollow and jagged points on apparently smooth automobile bearings, a little graphite should be mixed with the grease. Graphite permanently fills up the hollows and covers the points, will not squeeze out, takes on a smooth, glassy polish and keeps metal from metal. The right quantity of graphite varies with the bearings to be lubricated.

The proper compound for transmissions, differentials and other friction surfaces have been carefully worked out by the makers of Dixon's graphite automobile lubricants.

**N. A. C. C. STANDARD**

Definitions of standard truck chassis were recommended for adoption by the N. A. C. C. at the general meeting of the truck members recently held and were approved at the annual meeting of the association the following day. The object of these definitions is to indicate what minimum parts, finish and equipment constitute the standard chassis for gasoline and electric commercial vehicles. The organization also adopted a standard service and repair parts policy. This is an admirable move, as under its terms every purchaser of a car from any member will know when he buys his car just exactly what he may expect in the way of service.

## NEW COMPOUND OF RUBBER TO BRING RESULTS

Goodyear Experts Have Discovered Compound to Be Used in Heavy Tires

The Goodyear Tire & Rubber Company's experimental corps has discovered a new compound of rubber to be used in the manufacture of heavy duty solid truck tires, said H. A. Parker, sales manager of the Auto Service & Supply Company, Limited.

Very few people consider that pure rubber if made into a tire of any kind and put out upon the road would run but very few blocks. The different tire manufacturers have been working on compounds for years and with the use of certain chemicals and formulas each have their own mixture. Like many inventions some are better than others. By looking at the cars in the streets you will find which is the most popular make of tire by the majority of any one kind in use. The day is past where discounts figure in making a sale. Users today want to be free from trouble and adjustments and renewing tires, and are beginning to consider the first cost second to the quality of the article.

The S. J. demountable truck tire has a square tread, thereby starting to wear evenly from the time the tire is applied. It is protected on the sides by a high steel flange which is an integral part of the tire. These tires are guaranteed to give 7000 miles of actual service. Fifty-two thousand sol-

## WAY TO MORE MILEAGE FOR OWNERS AND THOUGHTFUL DRIVERS OF CARS

CHAPTER 13

An engineer does not depend upon the strength of materials alone, to make a safe railroad bridge or building—it is necessary that the structures also be designed along the right principles.

A successful tire must be properly designed, i. e., the shape suitable for the size of the section and a correct balance is an essential thing; the tire must be strong enough to render good service but not too thick, heavy or stiff to prevent distribution of strains and stand the flexing action in side walls.

Extra thickness and weights added to tires will cause additional heat and interfere with the radiation. Tread attachments or covers creep, chafe, heat

and stiffen the tread to such an extent that fabric breaks are caused by a localized hinging action in side walls.

It is not advisable to use liners in new tires because they tend to flatten the tires similar to under-inflation and, in many ways, interfere with the design and intended action. If made of flexible material, and well constructed, liners are a good thing in old tires, having separation and breaks in the fabric, and which would not, without reinforcement, be serviceable. Under such circumstances, liners strengthen the tires, protect inner tubes from being pinched by the fabric and often make it possible to secure a great deal of mileage.

id tires sold in America have averaged 11,300 miles' service.

The Goodyear solid cushion tire is designed for use on light trucks which must maintain a speed of over 15 miles per hour. It is more resilient than the solid. Eighty per cent of all fire apparatus manufactured in America is equipped with Goodyear cushion and Goodyear pneumatic tires.

**AUTO REPAIR SCHOOL FOR YOUNG WOMEN**

SACRAMENTO, Cal.—A course in automobile repairing will be introduced this year in the Santa Barbara State Normal school, according to President Frank H. Ball.

The school is equipped with several stalls and pits and ten experts of automobiles of various types.

The young women, as well as the men, will be eligible to take the course. The school enrolment in-

cludes about 150 women and 50 men.

As an auxiliary to the automobile course, a course in practical electricity will be taught. Concrete construction and forging also will be part of the 1916-17 curriculum.

**F. W. D'S TO MEXICO**

The Four-Wheel Drive Company, Clintonville, Wis., announces that it has received a further order from the government for 25 three-ton transport trucks and five additional 600-gallon tank trucks for use on the Mexican expedition.

**FORD LUMBER BILL**

It is stated that the Ford Motor Company uses 2,000,000 feet of lumber per month. In the course of a year this amounts to enough timber to build sufficient eight-room houses to make a city with 6000 inhabitants.

## FEDERAL TIRES



### Under the Blistering Sun

and the terrific heat of road friction, there is a strong sense of security in using

## FEDERAL

DOUBLE-CABLE-BASE  
"RUGGED" & "TRAFFIK" TREAD TIRES

A long slow cure (vulcanization) renders the carcass and tread of these tires unusually tough, cohesive and proof against fabric separation and heat blow-outs. All sizes for standard rims.

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### Kershner Vulcanizing Co., Ltd.

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Model 83 B



Electric Lights  
Electric Starter

**\$935 Cash  
\$975 Time**

Model 83 B Touring Car Roadster



## No Other Car at This Price Has So Much Power

As a rule motor car prices vary according to power. But this big, family Overland is the one outstanding exception to the rule. No car has yet appeared to dispute its supremacy. Its highly efficient long stroke engine of the latest en bloc design operates with great saving in petrol. No other car at anywhere near the Overland price is anywhere near so powerful. Big roomy seats—deeply upholstered, provide ample room for five passengers. Yet with all these comforts, the operating cost is exceedingly low. Complete electrical equipment which starts and lights the car, is included in the price. Electrical control buttons are conveniently located on the steering column within a few inches of the hand. Think of the pleasure and benefit you will derive from such a car. Think what it will mean to you in pleasure and comfort. You will be pleasantly surprised at the unusual value. We will gladly arrange for you to ride in the car and test its superb qualities. Call or write for catalogue.

## Schuman Carriage Co., Ltd.

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